JOINT TRANSNATIONAL CALL 2016:

"Minimally and non-invasive methods for early detection and/or progression of cancer"

PARTNER REQUEST/COLLABORATION OFFER

If you would like to have your profile published on the TRANSCAN-2 website, "Looking for a research partner" webpage, please fill out this form and send it to ✉
If you have any questions about this form, please do not hesitate to contact us at ✉

Note: Fields marked with a * are mandatory

Contact Information	
First name *	García Alonso
Last name *	José Ignacio
Position *	Full Professor
Telephone number	+34 985 10 34 84
E-mail address*	jiga@uniovi.es
Website address	
Institution/Organisation *	University of Oviedo
Department*	Department of Physical and Analytical Chemistry
Street	Julián Clavería 8
Postal Code / City *	33006
Country *	Spain

***I agree with the publication of my contact data and of this form on the TRANSCAN-2 Website:**

☑ YES

SEARCH FOR A COLLABORATOR

IF YOU ARE LOOKING FOR A PARTNER IN YOUR SUGGESTED PROPOSAL, PLEASE SPECIFY ALSO THE NEEDED EXPERTISE

Project proposal
Project title (draft):
Short description of the project in preparation and of the consortium; description of the areas of expertise needed (Max. 2000 words):

OFFER FOR COLLABORATION

IF YOU PROPOSE YOURSELF AS A PARTNER IN A CONSORTIUM, PLEASE DETAIL YOUR EXPERTISE

Short description of the areas of interest and expertise (Max. 2000 words):

Our research team is multidisciplinar and combines analytical chemists expert in Mass Spectrometry and cellular and molecular biologists expert in endocrine and metabolic studies at the University of Oviedo. We study **endocrine and metabolic changes** in pre-clinical models as well as in clinical samples from several types of cancer. By using **fluid biopsies** or **exhale samples** out from patients, we could determine changes in hormones, cytokines, proteins and metabolites by analytical and molecular techniques.

Our group have a strong background in determining **intracellular metabolites** in cells and biological fluids such as urine, blood or saliva. We are experts in the development of analytical methodologies using GC-MS, GC-MS/MS, LC-MS/MS and GC-Isotope Ratio-MS for targeted and untargeted analysis of metabolites. We are also experts in measuring isotopic composition of metabolites by different **mass spectrometric techniques** and the quantification of any organic molecule by **isotope dilution mass spectrometry** using labelled analogues. In addition, we are experts in absolute quantification of proteins using ^{13}C and ^{15}N labelled peptides and LC-MS/MS. We have also available in our laboratory a peptide synthesiser to produce any natural or ^{13}C-labelled peptide sequence. Therefore, we are able to offer the possibility to provide any natural or labelled specific peptides from any protein biomarker.

In addition, our section of cell biologists have the ability to **isolate cells** from tissues or **grow** circulating cells in **2D or 3D scaffolds** to study metabolic biomarkers by using either biochemical or molecular analysis including qPCR, western-blot, ELISA, flow cytometry or enzymatic activities.

In summary, we can offer our expertise to different projects in which the metabolism of healthy and cancer cells needs to be investigated either by growing cells in isotopically labelled media and measuring the metabolites by Mass Spectrometry or when the concentration of protein biomarkers in biological fluids needs to be measured accurately by Isotope Dilution Mass Spectrometry.

Recent and relevant publications of the group:

1. S. Cueto Díaz, J. Ruiz Encinar and J.I. Garcia Alonso. *Evaluation of online carbon isotope dilution mass spectrometry for the purity assessment of synthetic peptide standards*. Analytica Chimica Acta 844 (2014) 48-53.

2. A. González-Antuña, P. Rodríguez-González, R. Ohlendorf, A. Henrion, V. Delatour and J. I. García Alonso. *Determination of Cystatin C in human serum by isotope dilution mass spectrometry using mass overlapping peptides*. Journal of Proteomics 112, (2015) 141-155

3. M. Fernández-Fernández, P. Rodriguez-Gonzalez, M.E. Añón Álvarez, F. Rodríguez, F.V. Álvarez Menéndez and J.I. García Alonso. *Simultaneous Determination of Creatinine and Creatine in Human Serum by Double-Spike Isotope Dilution Liquid Chromatography–Tandem Mass Spectrometry (LC-MS/MS) and Gas Chromatography–Mass Spectrometry (GC-MS)*. Analytical Chemistry 87 (2015) 3755-3763

4. O. Galilea San Blas, F. Moreno Sanz, P. Herrero Espílez, B. Prieto García, F. V. Álvarez Menéndez, J. M. Marchante-Gayón and J. I. García Alonso. *Determination of free methionine in human blood plasma by*

species-specific isotope dilution HPLC-ICP-MS using 34S-labelled methionine. Journal of Analytical Atomic Spectrometry, 31 (2016) 1885-1894.

5. M. Fernández-Fernández, P. Rodríguez-González, J. I. García Alonso. *A simplified calculation procedure for mass isotopomer distribution analysis (MIDA) based on multiple linear regression*. Journal of Mass Spectrometry 51 (2016) 790-797.

6. O. Galilea San Blas, F. Moreno Sanz, P. Herrero Espílez, R. M. Sainz Menéndez, J. Carlos Mayo Barallo, J. M. Marchante-Gayón, J. I. García Alonso. *Evaluation of sulfur isotopic enrichment of urine metabolites for the differentiation of healthy and prostate cancer mice after the administration of 34 S labelled yeast*. Journal of Trace Elements in Medicine and Biology 39 (2017) 155-161.

7. J.I. Garcia Alonso, P. Rodriguez Gonzalez. *Isotope Dilution Mass Spectrometry*. Royal Society of Chemistry, Cambridge, 2013. ISBN: 978-1-84973-333-5.

8. Cimadevilla HM, Hevia D, Miar A, Mayo JC, Lombo F, Sainz RM. Development and validation of a single HPLC method for determination of α-tocopherol in cell culture and in human or mouse biological samples. Biomed. Chromatog. 2014 29(6):843-52.

9. González-Menendez P, Hevia D, Rodriguez-Garcia A, Mayo JC, Sainz RM. Regulation of GLUT transporters by flavonoids in androgen-sensitive and insensitive prostate cancer cells. Endocrinology. 2014. 155(9):3238-50

10. Miar AB, Hevia D, Astudillo A, Velasco J, Sainz RM, Mayo JC. Manganese superoxide dismutase (SOD2/MnSOD)/catalase and SOD2/GPx1 ratios as biomarkers for tumor progression and metastasis in prostate, colon, and lung cancer. Free Rad Biol Med 2015 85:45-55

11. Hevia D; Gonzalez P; Quiros I; Miar A; Tan DX; Reiter R; Mayo JC; Sainz R. Melatonin uptake through glucose transporters: a new target for melatonin inhibition of cancer J Pineal Res 2015 58(2):234-50

12. Mayo JC, Hevia D, Quiros-Gonzalez I, Rodriguez-Garcia A, Gonzalez-Menendez P, Cepas V, Gonzalez-Pola I, Sainz RM. IGFBP3 and MAPK/ERK signaling mediates melatonin-induced antitumor activity in prostate cancer. J Pineal Res. 2017 Jan;62(1). doi: 10.1111/jpi.12373

13. M. Fernández-Fernández, P. Rodríguez-González, D. Hevia Sánchez, P. González-Menéndez, R. M.Sainz Menéndez, J. I.García Alonso, Accurate and sensitive determination of molar fractions of ^{13}C-labelled intracellular metabolites in cell cultures grown in the presence of isotopically-labelled glucose. Analytica chimica Acta 2017 (submitted) for publication.